

container, when the container is mounted in the apparatus or for analyzing a signal from the transmitting/receiving transducer.

These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record. In accordance with the requirements of 37 C.F.R. § 1.121, a marked up version showing the changes to the claims is attached herewith as Appendix A. For the Examiner's convenience, a copy of the currently pending claims is also submitted herewith as Appendix B.

### **REMARKS**

Applicants note with appreciation the Examiner's allowance of Claims 1-10 and 18-25. Claims 27-44 are withdrawn, without prejudice, pursuant to the restriction requirement in the subject case. Claims 11-17 and 26 were rejected for alleged indefiniteness. Applicants note that the amendments are fully supported by the specification and introduce no new subject matter. For example, the amendments to claims 11-13 simply correct an error in antecedence. Example support for the amendments to claims 14-17 and 26 are found in the specification, e.g., at page 9, lines 5-15 and at page 11, line 18- page 12, line 22. Additional support for the amendments is found in the specification, original claims and figures.

Applicants have amended claims 11-13 and 14-17, overcoming the rejections of these claims. To the extent that the rejections are applied to the amended claims, Applicants traverse the rejections for the reasons noted herein. Claim 26 is amended to overcome a portion of the rejection, with the remainder of the rejection being traversed. To the extent that the rejection is applied to amended claim 26, Applicants traverse for the reasons herein.

The specification was also objected to for various alleged informalities. Applicants traverse these objections for the reasons noted below.

### **CLAIM REJECTIONS**

Claims 11-13 were rejected for an error in antecedence, i.e., use of the term "the computer" instead of "a computer." Applicants have amended the claims as helpfully suggested by the Examiner and, accordingly, the rejection should be withdrawn.

Claims 14-16 were rejected for alleged indefiniteness, in that the structural relationship of the transducer was allegedly unclear. Applicants have amended the claims to clarify

structural features of the relevant elements, essentially as helpfully suggested by the Examiner. Accordingly, the rejections should be withdrawn.

Claim 17 was similarly rejected for alleged indefiniteness for not reciting what the transducer is height or angle adjustable with respect to. The claim has been amended essentially as helpfully suggested by the Examiner. Accordingly, the rejections should be withdrawn.

Claim 26 was rejected for allegedly not specifying what the transducer is aligned with respect to. In this respect the claim has been amended as helpfully suggested by the Examiner, to indicate that the alignment is with respect to the container. The claim was also rejected for alleged indefiniteness in not reciting that the system software is used in a computer. Applicants respectfully traverse this portion of the rejection. The relevant system software does not need to be embodied in a computer, i.e., it can be embodied in appropriate digital media, or various processor components that might or might not be considered to constitute a computer. Thus, the use of system software does not presuppose the use of a computer, as indicated in the rejection. A computer is an optional element, and not a required element, for the claim at issue. Accordingly, the rejection should be withdrawn.

#### OBJECTIONS TO THE SPECIFICATION

The Action objects to the specification, alleging that the disclosure at page 6, line 5 to page 7, line 27 is directed to the background of the invention and should appear at that section. Applicants respectfully traverse. The section in question includes one introductory paragraph that introduces a problem solved by the present invention (the paragraph starting at page 6, line 5) and then describes aspects of the invention, sometimes in comparison to the prior art. The "background" section of an application is designed to provide an overview of the problems to be solved by an invention and should *not* describe the actual invention itself in any detail, as this leads to confusion as to what is a feature of the invention and what is present in the prior art. The section in question is primarily directed to features of the invention, discussing the prior art to the extent that doing so clarifies the invention itself. This is perfectly standard and acceptable practice in application drafting, and, indeed, one of skill will realize that one of the clearest ways in which a new thing can be described is, in part, with reference to the old thing that it replaces. In any case, the section in question is not a background section that is directed mostly or solely to the prior art, as is ordinarily

found in a Background of the Invention section. Accordingly, the objection is improper and should be withdrawn.

The Action further objects to the specification, alleging that the order of the sections on page 8, line 1 to page 10, line 27 and page 10, line 29 to page 12, line 26 should be reversed. Applicants respectfully traverse. The sections are logically ordered in that the section starting at page 8 describes various systems of the invention generally and the second section describes more particular embodiments. This is, in fact, the most standard way of ordering sections of an application and Applicants can perceive no reason why traveling from the general to the specific is a less desirable way of constructing a specification than going from the specific to the general. Certainly there is no rule or statute that requires the ordering urged in the Action. Accordingly, the objection should be withdrawn.

Similarly, with respect to the objection to the heading "Description of Example Embodiments" Applicants note that there is no prohibition against the use of descriptive headings in the detailed description of the invention section of an application. That is, while 37 CFR § 1.77 specifies the desirable order of application sections (even here, the language of the rule says "should" rather than "shall," and there is no requirement that the specification actually have the specified order of elements), the rule in no way *prohibits* the use of subheadings within these sections, e.g., to facilitate identification of relevant subsections of interest within the relevant application sections. Moreover, the use of such headings to facilitate subsection identification is ubiquitous in patent practice, as even a casual review of issued patents will show. For these reasons, Applicants traverse the objection and request that all objections to the specification be withdrawn.

#### SPECIAL NOTE REGARDING INVENTORSHIP

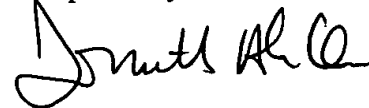
Applicants note that William J. Miller was inadvertently omitted as a listed inventor on the subject application. A petition to add Mr. Miller as an inventor in the subject application, along with an appropriate declaration from Mr. Miller, and a request for an amended filing receipt are submitted herewith.

**CONCLUSION**

The application is now in condition for allowance and a notice of allowance at an early date is requested. **Applicants hereby request an Examiner Interview, in the event that the Examiner believes that any issues of substance remain in the application.** Please contact the undersigned by telephone if any issues of substance remain.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jonathan Alan Quine".

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**APPENDIX A**

**"MARKED UP" CLAIMS ILLUSTRATING THE AMENDMENTS MADE TO THE  
CLAIMS OF 09/965,672 WITH ENTRY OF THIS AMENDMENT**

11 (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to [the] a computer, which computer comprises instructions for detecting one or more signal from the receiving transducer.

12 (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to [the] a computer, which computer comprises instructions for moving the receiving/transmitting transducer.

13 (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to [the] a computer, which computer comprises instructions for directing one or more signal outputs from the receiving/transmitting transducer.

14 (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is [configured to perform a circumferential scan of the container] positioned above or below the centerline of the container when the container is mounted in the apparatus, to provide a 45 degree shear wave as the search tube holder and transducer is moved along a longitudinal axis of the container.

15 (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is [configured to perform a longitudinal scan of the container] mounted on a search tube holder that holds the transducer at an angle to provide a 45 degree shear wave as the search tube holder and transducer is moved along a longitudinal axis of the container, when the container is mounted in the apparatus.

16 (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is [configured to perform a thickness scan of the container] positioned normal to the container, when the container is mounted in the apparatus to provide a longitudinal wave as the search tube holder and transducer is moved along a longitudinal axis of the container.

17 (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is height or angle adjustable with respect to the container, when the container is mounted in the apparatus.

26 (Amended). The container defect apparatus of claim 1, wherein the apparatus further comprises system software for aligning the transmitting transducer with respect to the container, when the container is mounted in the apparatus or for analyzing a signal from the transmitting/receiving transducer.

**APPENDIX B**

**CLAIMS PENDING IN USSN 09/965,672 WITH ENTRY OF THIS AMENDMENT**

1. A container defect detection apparatus, comprising:
  - a fluid tank;
  - a rotatable cup mounted within the fluid tank, which rotatable cup is configured to receive a first region of a container;
  - a rotatable cap configured to receive a second region of the container;
  - an engagement mechanism which moves the rotatable cup or rotatable cap towards or away from each other to engage the container;
  - a drive train coupled to the rotatable cup or the rotatable cap, which drive train turns the rotatable cup or rotatable cap; and,
  - an adjustable receiving/transmitting transducer positioned to mount proximal to the container.
2. The container defect apparatus of claim 1, wherein the cup comprises a centering ring.
3. The container defect apparatus of claim 1, wherein the cap comprises a rubber collar.
4. The container defect apparatus of claim 1, the drive train comprising:
  - a motor mounted outside of the fluid tank, which motor is coupled to a gearbox, which gear box is coupled to an output shaft, which output shaft passes through a bearing housing mounted in a wall of the fluid tank and into contact with the cap.
5. The container defect apparatus of claim 1, wherein the rotatable cap is shaped to mount over a cylinder valve.
6. The container defect apparatus of claim 1, wherein the rotatable cup is coupled to a tailstock assembly which comprises the engagement mechanism.
7. The container defect apparatus of claim 1, wherein the rotatable cup is coupled to a tailstock assembly which comprises the engagement mechanism, which engagement mechanism comprises a pneumatic cylinder which moves the rotatable cup into engagement with the container.
8. The container defect apparatus of claim 1, wherein the engagement mechanism comprises a pneumatic cylinder.

9. The container defect apparatus of claim 1, wherein: the rotatable cup is housed in a tailstock; the engagement mechanism comprises a slide upon which the tailstock moves towards or away from the drive train; and, the drive train is coupled to the rotatable cap.

10. The container defect apparatus of claim 1, comprising a receiving transducer display coupled to the receiving transducer, which display displays an output of the receiving/transmitting transducer.

11. (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to a computer, which computer comprises instructions for detecting one or more signal from the receiving transducer.

12. (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to a computer, which computer comprises instructions for moving the receiving/transmitting transducer.

13. (Amended). The container defect apparatus of claim 10, wherein the display is a computer screen and wherein the receiving transducer is coupled to a computer, which computer comprises instructions for directing one or more signal outputs from the receiving/transmitting transducer.

14. (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is positioned above or below the centerline of the container when the container is mounted in the apparatus, to provide a 45 degree shear wave as the search tube holder and transducer is moved along a longitudinal axis of the container.

15. (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is mounted on a search tube holder that holds the transducer at an angle to provide a 45 degree shear wave as the search tube holder and transducer is moved along a longitudinal axis of the container, when the container is mounted in the apparatus.

16. (Amended). The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is positioned normal to the container, when the container is mounted in the apparatus to provide a longitudinal wave as the search tube holder and transducer is moved along a longitudinal axis of the container.



**17. (Amended).** The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is height or angle adjustable with respect to the container, when the container is mounted in the apparatus.

**18.** The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is mounted on a search tube.

**19.** The container defect apparatus of claim 18, wherein the search tube is coupled to a rotatable search tube holder.

**20.** The container defect apparatus of claim 19, wherein the rotatable search tube holder is coupled to an x-y-z translation mechanism which comprises an x-axis linear table, an x-axis motor which drives the search tube holder along the x-axis linear table, and x-axis encoder which tracks motion of the search tube holder along the x-axis linear table, a y-axis linear table, a y-axis motor which drives the search tube holder along the y-axis linear table, a y-axis encoder which tracks motion of the search tube holder along the y-axis linear table, a z-axis linear table, a z-axis motor which drives the search tube holder along the z-axis linear table, and a z-axis encoder which tracks motion of the search tube holder along the z-axis.

**21.** The container defect apparatus of claim 1, wherein the receiving/transmitting transducer is a right angle transducer.

**22.** The container defect apparatus of claim 1, wherein the fluid tank is partly filled with water.

**23.** The container defect apparatus of claim 1, further comprising a container mounted between the rotatable cap and the rotatable cup.

**24.** The container defect apparatus of claim 23, wherein the container is a cylinder comprising a cylinder valve in the second region, wherein the rotatable cap is a drive collar shaped to mount over the cylinder valve.

**25.** The container defect apparatus of claim 1, wherein the apparatus is portable.

**26. (Amended).** The container defect apparatus of claim 1, wherein the apparatus further comprises system software for aligning the transmitting transducer with respect to the container,

when the container is mounted in the apparatus or for analyzing a signal from the transmitting/receiving transducer.